

ALABAMA DEPARTMENT OF TRANSPORTATION
PROCEDURE FOR EVALUATION AND MAINTENANCE OF

LIST II-21

NUCLEAR GAGES

1. **Material:** Moisture/Density Nuclear Gage
2. **Specification:** Department procedure
ALDOT-378 – Accepting New Nuclear
Moisture / Density and Thin Layer Gages, and
Recalibrating / Quality Checking Used
Gages.
- 2.1 M&T-14 – Portable Nuclear Surface Moisture
– Density Gages
- 2.2 M&T-30 – Nuclear Asphalt Content Gage
- 2.3 M&T-33 – Thin Layer Nuclear Density Gage
- 2.4 ALDOT Specifications for Highway
Construction, Section 306, Density
Requirements for Compaction
- 2.5 ALDOT Specifications for Highway
Construction, Section 410, Hot Mix Asphalt
Pavements
3. **Jurisdiction:** Product Evaluation Board,
Materials Engineer, Nuclear Calibration
Laboratory
4. **Job Acceptance Requirements:** New test
devices will be checked (quality check) for
precision prior to placement on project.
5. **Project Engineer's Responsibility:** Check
and assure that the device is on the approved
list.
- 5.1 Verify that the operator has been properly
trained to operate and transport the nuclear
device.
- 5.2 Verify that the area where the device is being
stored meets all Health Department
Regulations.
6. **Producer's Initial Requirements:**
Companies wishing to have devices
evaluated for placement on this list should
furnish the Department's Product Evaluation
Engineer with the following:
- 6.1 Name and address of the company
manufacturing the device (complete the
Department questionnaire)
- 6.2 Specification and Precision information for the
device.
- 6.3 One nuclear testing device should be
submitted to the Nuclear Calibration
Laboratory for evaluation purposes.
- 6.4 Submittal and testing fees according to
Department procedure ALDOT-355.
7. **Producer's Maintenance Requirements:**
- 7.1 Produce the same quality device as the
device supplied for the original evaluation.
- 7.2 Provide only approved devices to Department
projects.
- 7.3 Provide a one-year or more warranty on all
gages.
- 7.4 Promptly report to the Department any
changes in company name, device name,
company address, or company ownership.
- 7.5 Advise and make available any software
changes as the device is updated.
- 7.6 Notify the Department of any changes in
production of the device. Any alteration that
will change the device physically or
chemically will require a reevaluation of the
device
8. **Laboratory Testing:** The Department will
conduct a full evaluation of the device.
- 8.1 Soil density and moisture aspects will be
evaluated by comparing nuclear gage
readings to known block values to ensure the
gage counts within established tolerances.
- 8.2 Thin layer aspects of the gage will first be
evaluated in the laboratory by simulating a
calibration to a known overlay density to
ensure the gage will count within tolerances
after the calibration is established.
- 8.3 A field evaluation will be conducted on at
least two construction projects, where the
gage will be calibrated to an asphalt mixture.
The asphalt materials used on these projects
will be composed of various types of
aggregates to ensure the gage will calibrate
on all types of materials.
9. **Contractors' Requirements:** The prime
contractor will be responsible for purchasing
and using only approved products.
10. **Removal of Products:** Devices will be
removed from this list for any of the following:
- 10.1 Failure to meet any of the Departments
requirements for this type of device.
- 10.2 Failure to work satisfactorily on the job.
11. **Correspondence:** All correspondence
concerning this list should be directed to the
following:
Product Evaluation Board
Alabama Department of Transportation
3704 Fairground Road
Montgomery, AL 36110